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CLAIMS:

1-2. (Cancelled.)

3. (Previously Presented) A network system for a network having plural nodes connected, wherein a node belonging to said network comprises:

a CPU (Central Processing Unit) executing a learning frame management unit which refers to a source media access control address (MAC SA) table cache to determine whether a learning frame transmission request of a MAC SA has been made; and

a memory system that stores:

a MAC forwarding table memory which stores an output port for a destination MAC address and destination tag information corresponding to a virtual local area network (VLAN) tagged Ethernet frame, said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal frame flows; and

the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request, said main signal frame having said source MAC address and said destination MAC address.

4. (Previously Presented) The network system as set forth in claim 3, wherein said nodes comprise:

an aging request acceptance unit which ages said MAC SA table cache, and

a transmission request unit which makes a learning frame transmission request to a CPU.

5. (Previously Presented) The network system as set forth in claim 4, wherein said nodes have a learning management computer-readable medium encoded with a computer program installed thereon which conducts a learning frame process.

6. (Withdrawn – Previously Presented) A network system for a network having plural nodes connected, wherein a node belonging to said network comprises:

a learning management computer-readable medium encoded with a computer

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program which conducts a learning frame process; and
a software table stored in a memory,
wherein a network control computer-readable medium encoded with a computer
program uses a set of memory duplicate information to perform an entry search in the
software table.

7. (Previously Presented) The network system as set forth in claim 3, wherein said node
has an equipment control computer-readable medium encoded with a computer program
installed thereon which conducts a variety of configurations.

8. (Previously Presented) The network system as set forth in claim 3, wherein
said node comprises a frame type judgment unit which judges an input frame.

9. (Previously Presented) The network system as set forth in claim 3, wherein a node
belonging to said network comprises:

an aging control unit which ages an entry to be aged, and
an aging management table which stores an entry to be aged.

10. (Cancelled.)

11. (Previously Presented) The network system as set forth in claim 3, wherein said node
comprises a broadcast table memory which stores an output destination port at a time of
broadcasting to a tag.

12. (Previously Presented) The network system as set forth in claim 3, wherein said node
comprises a tag forwarding table memory which stores an output port for a forwarding tag.

13. (Previously Presented) The network system as set forth in claim 3, wherein said node
comprises:

a table stored in a memory;
an aging circuit; and

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a forwarding table having a table read/write circuit.

14. (Previously Presented) The network system as set forth in claim 3, wherein said node comprises a TAG address management table which stores an address of a forwarding tag on a MAC forwarding table memory.

15. (Withdrawn – Previously Presented) A network system for a network having plural nodes connected, wherein a node belonging to said network applies a learning function of Ethernet to an asymmetric flow by sending a learning frame through an opposite path to a path where a main signal frame flows.

16-17. (Cancelled.)

18. (Previously Presented) A learning bridge node of a network having plural nodes connected, said learning bridge node comprising:

a CPU (Central Processing Unit) executing a learning frame management unit which refers to a source media access control address (MAC SA) table cache to determine whether a learning frame transmission request of a MAC SA has been made; and

a memory system that stores:

a MAC forwarding table memory which stores an output port for a destination MAC address and destination tag information corresponding to a virtual local area network (VLAN) tagged Ethernet frame, said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal frame flows; and

the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request, said main signal frame having said source MAC address and said destination MAC address.

19. (Original) The learning bridge node as set forth in claim 18, comprising:
an aging request acceptance unit which ages a MAC SA table cache, and
a transmission request unit which makes a learning frame transmission request to a

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CPU.

20. (Previously Presented) The learning bridge node as set forth in claim 19, comprising a learning management computer-readable medium encoded with a computer program which performs learning frame processing.
21. (Withdrawn – Previously Presented) A learning bridge node for a network having plural nodes connected, said learning bridge node comprising:
a learning management computer-readable medium encoded with a computer program which performs learning frame processing; and
a software table stored in a memory,
wherein a network control computer-readable medium encoded with a computer program uses a set of memory duplicate information to perform an entry search in the software table.
22. (Previously Presented) The learning bridge node as set forth in claim 18, comprising an equipment control computer-readable medium encoded with a computer program which makes a variety of configurations.
23. (Original) The learning bridge node as set forth in claim 18, comprising a frame type judgment unit which judges an input frame.
24. (Original) The learning bridge node as set forth in claim 18, comprising:
an aging control unit which ages an entry to be aged, and
an aging management table which stores an entry to be aged.
25. (Cancelled.)
26. (Previously Presented) The learning bridge node as set forth in claim 18, comprising a broadcast table memory which stores an output destination port at a time of broadcasting to a tag.

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27. (Original) The learning bridge node as set forth in claim 18, comprising a tag forwarding table memory which stores an output port for a forwarding tag.
28. (Previously Presented) The learning bridge node as set forth in claim 18, comprising:
a forwarding table having a table;
an aging circuit; and
a table read/write circuit.
29. (Original) The learning bridge node as set forth in claim 18, comprising a TAG address management table which stores an address of a forwarding tag on a MAC forwarding table memory.
30. (Withdrawn – Previously Presented) A learning bridge node for a network having plural nodes connected, wherein a learning function of Ethernet is applied to an asymmetric flow by sending a learning frame through an opposite path to a path where a main signal frame flows.
- 31-32. (Cancelled.)
33. (Previously Presented) A learning method of a network having plural nodes connected, wherein a node belonging to said network uses a CPU (Central Processing Unit) to:
refer to a source media access control address (MAC SA) table cache to judge whether a learning frame transmission request of a MAC SA has been made, and
store the MAC SA which has made a learning frame transmission request in said MAC SA table cache, and
store an output port for a destination MAC address and a destination tag information corresponding to a virtual local area network (VLAN) tagged Ethernet frame in a MAC forwarding table memory, said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal

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frame flows, said main signal frame having a source MAC address and said destination MAC address.

34. (Original) The learning method as set forth in claim 33, wherein said node performs aging of said MAC SA table cache and makes a learning frame transmission request to a CPU.

35. (Previously Presented) The learning method as set forth in claim 34, wherein said node is provided with a learning management computer-readable medium encoded with a computer program which performs learning frame processing.

36. (Withdrawn – Previously Presented) A learning method for a network having plural nodes connected, wherein a node belonging to said network comprises:

- a learning management computer-readable medium encoded with a computer program which performs learning frame processing; and

- a software table stored in a memory,

- wherein a network control computer-readable medium encoded with a computer program uses a set of memory duplicate information to perform an entry search in the software table.

37. (Previously Presented) The learning method as set forth in claim 33, wherein said node comprises an equipment control computer-readable medium encoded with a computer program which makes a variety of configuration.

38. (Original) The learning method as set forth in claim 33, wherein said node discriminates an input frame.

39. (Original) The learning method as set forth in claim 33, wherein a node belonging to said network performs aging of an entry to be aged and stores an entry to be aged in an aging management table.

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40. (Cancelled.)

41. (Previously Presented) The learning method as set forth in claim 33, wherein said node stores an output destination port at a time of broadcasting to a tag in a broadcast table memory.

42. (Original) The learning method as set forth in claim 33, wherein said node stores an output port for a forwarding tag in a tag forwarding table memory.

43. (Previously Presented) The learning method as set forth in claim 33, wherein said node comprises:

- a forwarding table having a table stored in a memory;
- an aging circuit; and
- a table read/write circuit.

44. (Original) The learning method as set forth in claim 33, wherein said node stores an address of a forwarding tag on a MAC forwarding table memory in a TAG address management table.

45. (Withdrawn – Previously Presented) A learning method for a network having plural nodes connected, wherein a node belonging to said network applies a learning function of Ethernet to an asymmetric flow by sending a learning frame through an opposite path to a path where a main signal frame flows.